

REMARKS

This application has been carefully reviewed in light of the Office Action dated May 29, 2008. Claims 1 to 10 and 12 are in the application, of which Claims 1, 5, 9, 10 and 12 are independent. Reconsideration and further examination are respectfully requested.

Claims 1, 2, 5 to 10 and 12 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,525,888 (Toya) in view of U.S. Patent No. 5,631,677 (Horigome), and Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) over Toya in view of Horigome and further in view of U.S. Patent No. 6,563,766 (Nakamiya). Reconsideration and withdrawal of the rejections are respectfully requested.

Claims 1, 9 and 12

The invention of independent Claims 1, 9 and 12 generally concerns an electric charging apparatus being attachable to a printer that is driven with electric power supplied from the electric charging apparatus while the electric charging apparatus is attached to the printer. The electric charging apparatus includes a battery. Among many features, Claims 1, 9 and 12 include the features of displaying a battery residual capacity of the battery of the electric charging apparatus based on residual capacity information received from the printer, wherein the residual capacity of the battery is detected by the printer based on electric power being supplied via a terminal from the battery to the printer while the electric charging apparatus is attached to the printer.

Referring specifically to claim language, amended independent Claim 1 is directed to an electric charging apparatus being attachable to a printer that is driven with

electric power supplied from the electric charging apparatus while the electric charging apparatus is attached to the printer. The electric charging apparatus includes a battery, and a terminal configured to supply electric power from the battery to the printer while the electric charging apparatus is attached to the printer. The electric charging apparatus also includes a reception unit configured to receive, from the printer, residual capacity information corresponding to a battery residual capacity of the battery, and a display unit configured to display the battery residual capacity of the battery. The electric charging apparatus further includes a display control unit configured to cause the display unit to display the battery residual capacity of the battery based on the residual capacity information received from the printer by the reception unit. The residual capacity of the battery is detected by the printer based on the electric power being supplied via the terminal from the battery to the printer while the electric charging apparatus is attached to the printer.

Amended independent Claim 9 is directed towards a method generally in accordance with the apparatus of Claim 1.

Amended independent Claim 12 is directed towards an apparatus generally in accordance with that of Claim 1, but includes additional features. Specifically, Claim 12 is directed to an electric charging apparatus being attachable to a printer that is driven with electric power supplied from the electric charging apparatus while the electric charging apparatus is attached to the printer. The electric charging apparatus includes a battery, and a terminal configured to supply electric power from the battery to the printer while the electric charging apparatus is attached to the printer. The electric charging apparatus also includes a communication unit configured to perform communication with the printer, and

a display unit configured to display a battery residual capacity of the battery. In addition, the electric charging apparatus includes a display control unit configured to, when residual capacity information corresponding to the battery residual capacity of the battery is received from the printer via the communication unit, display the battery residual capacity on the display unit based on the residual capacity information. The electric charging apparatus further includes a control unit configured to control electric charging of the battery in accordance with the residual capacity information. The battery residual capacity of the battery is detected by the printer based on the electric power being supplied via the terminal from the battery to the printer, while the electric charging apparatus is attached to the printer.

The applied art, alone or in any permissible combination, is not seen to disclose or to suggest the features of Claims 1, 9 and 12, and in particular, is not seen to disclose or to suggest at least the features of displaying a battery residual capacity of a battery of an electric charging apparatus based on residual capacity information received from a printer, wherein the residual capacity of the battery is detected by the printer based on electric power being supplied via a terminal from the battery to the printer while the electric charging apparatus is attached to the printer.

In this regard, Toya is merely seen to disclose that a battery charger holds a battery pack for supplying power to electronic equipment to which it is attached and charges the battery pack. (See column 2, lines 20 to 25 of Toya). The battery charger includes an LED display 36 to indicate charging or completion of charging. (See Figures 2 and 3 and column 4, lines 28 to 30 of Toya). The battery charger computes a remaining battery pack capacity based on measured battery pack discharge current, sends the battery

pack remaining capacity to a portable telephone, and the portable telephone computes and displays a remaining telephone conversation time based on the remaining capacity. (See column 5, lines 16 to 27 of Toya). Thus, in Toya, the battery charger detects remaining capacity of the battery pack held in the battery charger and sends remaining capacity battery information to a portable telephone. In contrast, in the present invention, a residual capacity of a battery included in an electric charging apparatus is detected by a printer based on electric power being supplied via a terminal from the battery to the printer while the electric charging apparatus is attached to the printer, and the printer sends the residual capacity information to the electric charging apparatus.

Further, page 3 of the Office Action alleges that Toya (Figure 3 and elements 36 and 43) discloses a display means for displaying a battery residual capacity of a secondary battery, and display control means for causing the display means to display the battery residual capacity information received. However, display unit 36 merely indicates whether a battery pack is charging or if charging is complete, which is not seen to be the same as displaying a battery residual capacity of a battery of an electric charging apparatus based on residual capacity information received from a printer. Moreover, microcomputer 43 of Toya is merely seen to determine a battery voltage of the battery pack, and to send the battery voltage remaining capacity information to a portable telephone. Accordingly, microcomputer 43 is not seen to cause a display unit to display battery residual capacity information. Therefore, Toya is not seen to disclose displaying a battery residual capacity of a battery of an electric charging apparatus based on residual capacity information received from a printer, wherein the residual capacity of the battery is detected by the

printer based on electric power being supplied via a terminal from the battery to the printer while the electric charging apparatus is attached to the printer.

Horigome is merely seen to disclose that a printing apparatus is capable of being driven by a battery included in the printing apparatus, and that the printing apparatus can charge the battery while the occurrence of a memory effect is suppressed. (See Abstract of Horigome). The printing apparatus monitors battery capacity during a printing operation, detects battery voltage in an interval of time in which a drop in battery voltage is largest, and controls operation of printing depending upon the results of detection. (See column 6, lines 36 to 44). However, the printing apparatus of Horigome is not seen to be driven by a battery held in an electric charging apparatus, while the electric charging apparatus is attached to the printer, and is thus not seen to detect a battery residual capacity of the battery held in the electric charging apparatus attached to the printer and to send the battery residual capacity information to the electric charging apparatus. Therefore, Horigome is not seen to disclose displaying a battery residual capacity of a battery of an electric charging apparatus based on residual capacity information received from a printer, wherein the residual capacity of the battery is detected by the printer based on electric power being supplied via a terminal from the battery to the printer while the electric charging apparatus is attached to the printer.

Nakamiya is not seen to cure the above described deficiencies of Toya and Horigome. In this regard, Nakamiya is merely seen to disclose a voltage detection and a remaining battery voltage display for a secondary power source so as to notify a user of the remaining battery voltage of the secondary power source at an optimal timing and accurate manner. However, Nakamiya is not seen to add anything that, when combined with Toya

and/or Horigome, would have resulted in the above described features of Claims 1, 9 and 12.

Accordingly, Claims 1, 9 and 12 are believed to be in condition for allowance, and Applicant respectfully requests same.

Claims 5 and 10

The invention of independent Claims 5 and 10 generally concerns a printer, to which an electric charging unit for holding and charging a battery is attachable, and that is driven with electric power from the battery while the electric charging unit is attached to the printer. Among many features, Claims 5 and 10 include the feature of detecting a battery residual capacity of a battery held in an electric charging unit based on electric power supplied from the battery, in a state where a consumption of power of the printer is approximately constant while the electric charging unit is attached to the printer.

Referring specifically to claim language, amended independent Claim 5 is directed to a printer, to which an electric charging unit for holding and charging a battery is attachable, and that is driven with electric power from the battery while the electric charging unit is attached to the printer. The printer includes a reception unit configured to receive electric power supplied from the battery held in the electric charging unit while the printer is attached to the electric charging unit. The printer also includes a residual capacity detection unit configured to detect a battery residual capacity of the battery held in the electric charging unit based on the electric power received by the reception unit, in a state where a consumption power of the printer is approximately constant while the electric charging unit is attached to the printer. The printer further includes a residual capacity transmission unit configured to transmit, to the electric charging unit, residual capacity

information corresponding to the battery residual capacity detected by the residual capacity detection unit.

Amended independent Claim 10 is directed to a method generally in accordance with the apparatus of Claim 5.

The applied art, alone or in any permissible combination, is not seen to disclose or to suggest the features of Claims 5 and 10, and in particular, is not seen to disclose or to suggest at least the features of a printer detecting a battery residual capacity of a battery held in an electric charging unit based on electric power supplied from the battery, in a state where a consumption of power of the printer is approximately constant while the electric charging unit is attached to the printer.

As discussed above, Toya and Horigome are not seen to disclose that a residual capacity of a battery is detected by a printer based on electric power being supplied via a terminal from the battery to the printer while the printer is attached to the electric charging apparatus. Accordingly, Toya and Horigome are also not seen to disclose a printer detecting a battery residual capacity of a battery held in an electric charging unit based on electric power supplied from the battery, in a state where a consumption of power of the printer is approximately constant while the electric charging unit is attached to the printer.

In addition, Nakamiya is not seen to cure the deficiencies of Toya and Horigome. Accordingly, Claims 5 and 10 are believed to be in condition for allowance, and Applicant respectfully requests same.

The other claims in the application are each dependent from the independent claims discussed above and are therefore believed to be allowable over the applied art for

the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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